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**United States Patent** [19][11] **Patent Number:** **5,299,307****Young**[45] **Date of Patent:** **Mar. 29, 1994**[54] **CONTROLS FOR DRAWING IMAGES ON COMPUTER DISPLAYS**[75] **Inventor:** **Craig S. Young, Zephyr Cove, Nev.**[73] **Assignee:** **Claris Corporation, Santa Clara, Calif.**[21] **Appl. No.:** **568,983**[22] **Filed:** **Aug. 17, 1990**[51] **Int. Cl.<sup>5</sup>** ..... **G06F 15/60**[52] **U.S. Cl.** ..... **395/161; 395/155; 345/157; 345/163**[58] **Field of Search** ..... **364/518, 521, 522; 340/747, 750, 706, 710, 711, 709, 710; 395/133, 135, 141, 155, 161**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57]

**ABSTRACT**

A computer system provides a method and an apparatus for generating and manipulating graphic objects on a computer display screen. The computer aided design and drawing system includes a graphic guide used for associating edges and points of one graphic image with one or more other images. The graphic guide operates in relation to the position of a cursor on the computer display screen. After a first image has been drawn on the screen, the graphic guide automatically is initiated to assist the user in positioning and sizing a second and subsequent images that are drawn on the display screen. The computer system also includes a wall tool used for efficiently generating wall objects displayed on the display screen. Wall objects are generated and manipulated by specifying the width of the wall, displaying joints between walls, capping the ends of walls, and efficiently measuring the interior, exterior or center dimension of a wall. The present invention also includes a clean up tool used for manipulating and modifying the intersection, the joining, and the extension of graphic images displayed on the display screen. The clean up tool can be used to automatically remove interior line segments of objects, to remove desired portions of objects, or to automatically extend and join two objects.

